July 14, 1964 W. H. McGATHEY 3,140,711

KINESTHETIC THERAPEUTIC EXERCISING DEVICE

Filed Dec. 31, 1962 3 Sheets-Sheet 1

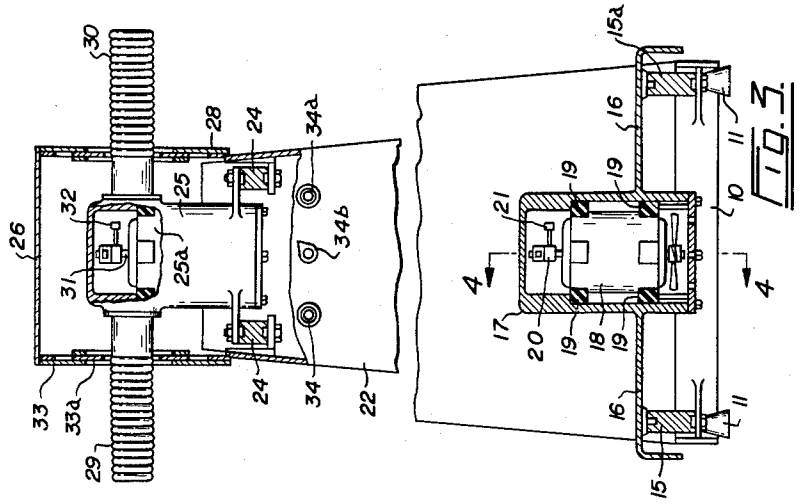

FIG. 3.

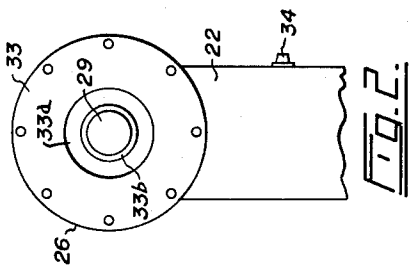

FIG. 2.

FIG. 1.

INVENTOR
WENDELL HARRY McGATHEY

BY
Kenyon, Palmer, Stewart & Estabrook
ATTORNEYS

July 14, 1964 W. H. McGATHEY 3,140,711

KINESTHETIC THERAPEUTIC EXERCISING DEVICE

Filed Dec. 31, 1962 3 Sheets-Sheet 2

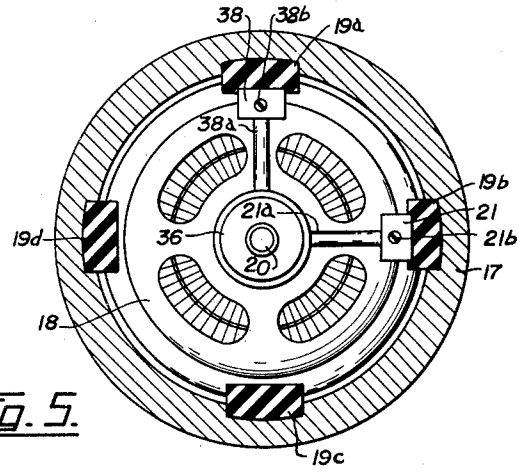

FIG. 5.

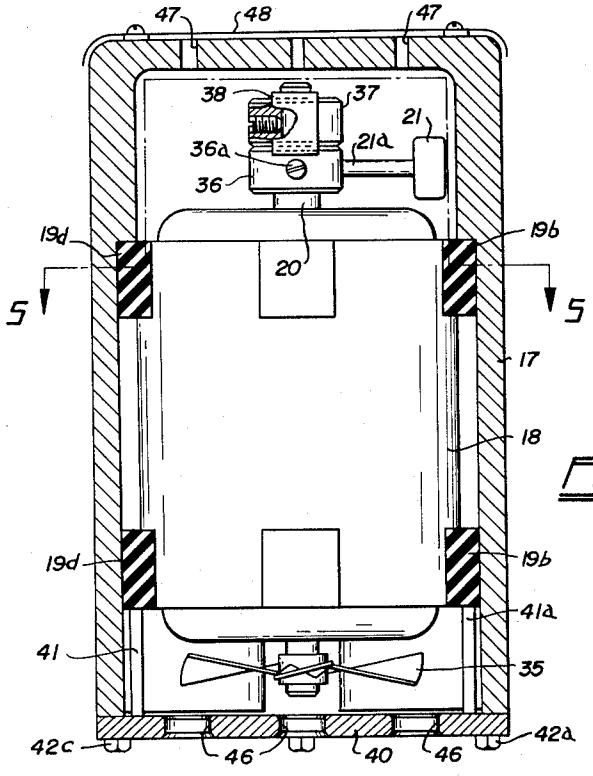

FIG. 4.

INVENTOR
WENDELL HARRY McGATHEY

BY
Kenon, Palmer, Stewart & Eitelbach
ATTORNEYS

July 14, 1964 W. H. McGATHEY 3,140,711

KINESTHETIC THERAPEUTIC EXERCISING DEVICE

Filed Dec. 31, 1962 3 Sheets-Sheet 3

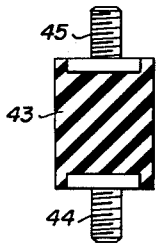

FIG. 7.

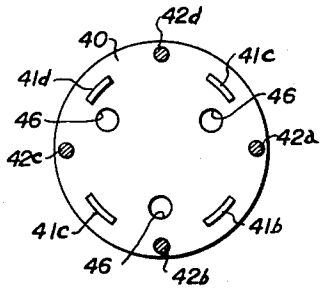

FIG. 9.

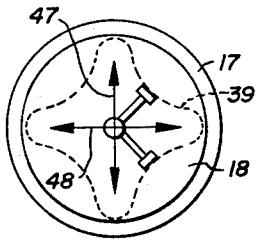

FIG. 8.

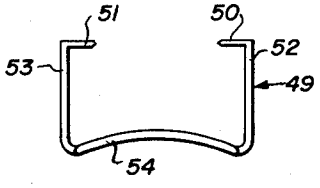

FIG. 11.

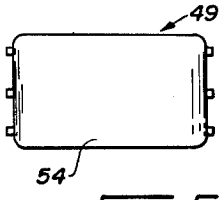

FIG. 6.

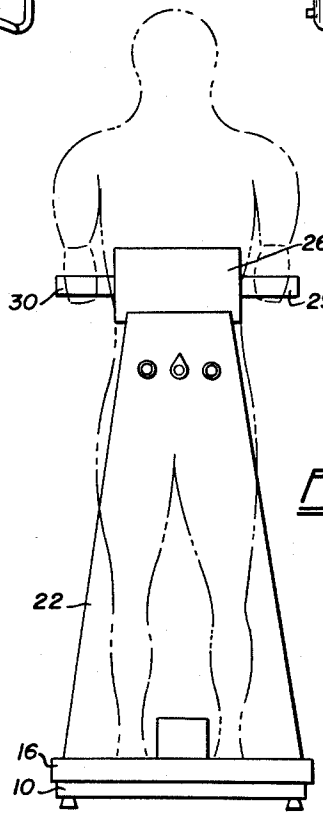

FIG. 10.

INVENTOR
WENDELL HARRY McGATHEY

BY
Kenon, Palmer, Reward & Estabrook
ATTORNEYS

United States Patent Office 3,140,711 Patented July 14, 1964

3,140,711

KINESTHETIC THERAPEUTIC EXERCISING DEVICE

Wendell Harry McGathey, 374 George St., Fredericton, New Brunswick, Canada

Filed Dec. 31, 1962, Ser. No. 248,639
7 Claims. (Cl. 128—33)

The present invention relates to a kinesthetic therapeutic exercising device. More specifically this invention relates to a device having a platform which vibrates extremely rapidly in a plurality of directions, as will be explained hereinafter, on which a person undergoing treatment stands, and a second rapidly vibrating apparatus provided with handles for such person to grasp.

It is an object of this invention to provide a device wherein a person being treated thereby is subjected to rapid minute vibrations through his entire body.

It is a further object of this invention to provide an apparatus adapted to subject a person undergoing treatment to rapid minute vibration throughout his entire bone structure and radiating out through the body tissues.

It is a still further object of this invention to provide an apparatus whereby a person undergoing treatment is subjected to two independent sources of rapid vibrations, one such source being a platform on which a person stands, the other source emanating from handles which such person grasps.

It is a still further object of this invention to provide a kinesthetic therapeutic exercising device wherein a person undergoing treatment thereon is seated on a chair or stool through which rapid vibrations are transmitted.

A still further object of this invention is to provide a kinesthetic therapeutic exercising device comprising in combination a base, a pedestal mounted on one end of said base, a platform on said base adjacent said pedestal, a plurality of resilient mounts between said base and said platform maintaining said platform in spaced relationship from said base, a lower motor casing fixedly mounted on said platform, a plurality of resilient mounts within said casing supporting a motor and maintaining said motor in spaced relationship from said lower casing, two eccentric weights axially mounted on said motor, said pedestal having an internally projecting mount member fixedly attached thereto near the upper end thereof, resilient mounts on said mount member, an upper motor casing mounted on said last named motor mounts and projecting upwardly from said pedestal, a plurality of resilient mounts within said upper motor casing supporting a motor and maintaining said motor in spaced relationship from said casing, a motor hood fixedly attached to the upper periphery of said pedestal, encasing said upper motor and its casing in spaced relationship, and a pair of handles fixedly attached to said motor casing and being diametrically opposed thereon, said handles projecting through said motor hood, resilient lips on said motor hood through which said handles project in spaced relationship, and two axially mounted eccentric weights on said last named motor, and control switches on said pedestal controlling both of said motors.

In devising the present invention it was a primary object to provide a kinesthetic therapeutic exercising device which creates rapid minute vibrations which are transmitted to the bone structure of a patient and thence outwardly through the patient's complete body. Vibrations created by the present invention have been found to be extremely beneficial in stimulating blood circulation and in improving muscular development, as well as in providing dramatic relief for painful joints and for muscular ailments.

Reference will now be made to the drawings, wherein:

FIGURE 1 is a side plan view in partial cross-section of an apparatus according to the invention;

FIGURE 2 is a side plan view of the upper portion of an apparatus according to the invention.

FIGURE 3 is a sectional view taken along line 3—3 in FIGURE 1;

FIGURE 4 is a sectional view along line 4—4 in FIGURE 3;

FIGURE 5 is a sectional view taken along line 5—5 of FIGURE 4;

FIGURE 6 is a front plan view of a back-rest.

FIGURE 7 is an enlarged sectional view of a resilient mount;

FIGURE 8 is a diagrammatic view of the path of travel of eccentric weights according to the invention;

FIGURE 9 is a top plan view of a motor casing closure;

FIGURE 10 is a front plan view of an apparatus according to the invention with a patient (shown in broken lines) standing thereon;

FIGURE 11 is a top plan view of a back rest.

More detailed reference will now be made to the drawings.

In FIGURE 1, a base **10** is supported by fixedly attached rubber legs **11** and **12** and corresponding legs **11***a* and **12***a* (not shown). A plurality of resilient support members **13**, **14**, and **15** resiliently support a platform **16**. As will be appreciated from FIGURE 3, resilient supports are provided on both sides of pltaform **16**, and in FIGURE 3 resilient supports **15** and **15***a* may be seen. Similarly, rubber base legs **11** and **11***a* are visible in FIGURE 3.

Referring again to FIGURE 1, a motor casing **17** is fixedy attached to platform **16**, and as seen in FIGURE 3, casing **17** houses a motor **18** which is resiliently supported within casing **17** by a plurality of resilient motor supports **19**. Mounted on motor axle **20** is eccentric weight **21**, one of two such weights as will be explained hereinafter. A hollow upright pedestal **22** is fixedly mounted on one end of base **10**. Near the upper end of pedestal **22** is a mount member **23**, fixedly attached to pedestal **22**. A plurality of resilient motor mount members **24** are provided on motor support **23**, and a motor casing **25** is mounted on said resilient mount member **24**. A motor hood **26** is fixedly attached at **28** to pedestal **22**. As is more evident in FIGURE 3, a motor casing **25** is provided with fixedly attached handles **29** and **30** projecting therefrom and being diametrically opposed on motor casing **25**.

As is seen in FIGURE 2, the side of hood **26** is provided with a closure **33** having a flexible inner lip **33***a* through which handle **29** projects. A space **33***b* exists circumferentially between both handles **29** and **30** and closures **33**. A rubber lip **33***a* is mounted in an interior flange on motor hood closure **33**.

Handles **29** and **30** may be insulated by rubber or plastic hand grips, or may be of any suitable metal, ridged for firm grip as illustrated.

The motor mounts supporting platform **16** on base **10** and supporting motor casing **25** on mount member **23** are illustrated in FIGURE 7, wherein flexible rubber mount **43** has vulcanized to its lower and upper ends bolts **44** and **45** respectively. Bolt **44** of mount **43** is shown in FIGURE 1 to be bolted to motor support member **23**, while bolt **45** on the upper surface of resilient rubber mount **43** is threadably engaged in an internally threaded projection on the underside of platform **16**.

Suitable control switches **34** and **34***a* are conveniently located on pedestal **22**, and these switches control motors **18** and **25** so that both motors may be operated simultane-

ously or independently, and also to control the speed of both motors, and a further switch 34*b* controls the period of operation of both motors.

Referring now to FIGURES 4 and 5, motor **18** and its casing **17** are illustrated in enlarged view. Eccentric weight **21**, mounted on support arm or finger **21***a* is affixed to wheel mount **36** which in turn is held on motor axle **20** by set screw **36***a*. In FIGURE 5, eccentric weights **21** and **38** are illustrated in approximately 90° relationship, eccentric weight **30** being adjustably affixed to axle **20** by wheel mount **38***a* in the same manner as eccentric weight **21**.

While motor **18** is in operation it will be realized that when eccentric weights **21** and **38** are positioned as shown in FIGURES 4 and 5, rapid vibrations are caused. It will be further understood that such weights are axially adjustable on motor axle **20** through simple adjustment of attachment wheel **36** and set screw *36a* in the case of eccentric weight **21** and attachment wheel **37** and a corresponding set screw (not shown) in the case of eccentric weight **38**. The extent of vibration may therefore be increased by adjusting eccentric weights **21** and **38** between 180° and 0°. At 180° there will of course be little or no vibration while maximum motor vibration is obtained when eccentric weights **21** and **38** are at 0°. The intensity of the vibrations may also be varied by adjusting the position of weights **21** and **38** on support fingers **21***a* and *38a*, respectively, by means of set screws **21***b* and *38b* in weights **21** and **38** respectively. Increased motor speed will also increase the intensity of the vibration.

As illustrated in FIGURES 4 and 5, motor **18** is supported at its top and at its bottom by a plurality of resilient motor mounts **19**. In effect motor mounts **19** are divided into four pairs **19***a, b, c,* and *d,* and are spaced at four equal intervals around motor casing **17**, thus supporting motor **18** at its top and at its bottom at four equally spaced points around the circumference of motor **18**.

In FIGURE 4 it will be seen that cooperating indentations are provided on the exterior of motor **18** and on the interior of motor casing **17**, adapted to receive motor mounts **19**.

As seen in FIGURES 4 and 9, bottom closure **40** of motor casing **17** is provided with four projecting fingers **41***a, b, c* and *d* which are equally spaced around the periphery thereof and are adapted to press against motor mounts **19***a, b, c,* and *d*. Bottom closure **40** may be conveniently affixed to casing **17** by means of screws **42***a, b, c,* and *d* spaced intermediate fingers **41***a, b, c, d*.

Referring again to FIGURE 4, cooling fan **35** on the underside of motor **18** provides for air circulation around motor **18** through orifices **46** in closure **14** on the bottom of motor casing **17**, through a space around the motor rotor (not shown) to the top of motor **18**, and thence downwardly between the space around the periphery of motor **18** and motor casing **17**. Alternatively, orifices **47** may be provided in the upper surface of motor casing **17** underneath a cap **48** so that fan **35** will draw air underneath cap **48** through orifices **47** and thence downwardly around motor **18** in the space between motor casing **17**, and finally exhaust such air through orifices **46** in bottom closure **40**.

Similarly upper motor **25***a* is supported within casing **25** by resilient mounts and is provided with a cooling fan in the same manner as motor **18**.

The therapeutic device described herein permits a very low platform **16**, which may be as low as three inches or less from the floor, does not necessitate mechanical connections between the motor vibration means and the vibrating platform or handles, and provides penetrating vibrations unlike all known devices. A patient standing on platform **16** is subjected to vibrations which travel through the bones of the feet and thence through the leg bones and to the trunk and head and through the body tissues, while the vibrations emitted by handles **29** and **30** travel through the bones of the hand and the arms to both the trunk and the head and, again, through the body tissues.

As is illustrated in FIGURE 8 the motor vibration follows a path **39** which is of four directions illustrated by arrows **47** and **48**. The resistance of motor mounts **19** causes the motor, under the influence of its eccentric weights to follow a regular path around motor mounts **19**.

A patient standing or sitting on platform **16** and grasping handles **29** and **30** will thus be subjected to a plurality of motions, from platform **16** and handles **29** and **30**. The entire body is thus subjected to intense rapid vibration with a resultant stimulation to blood circulation, nerves and body tissues.

If desired, suitable recesses may be provided in platform **16** to receive the legs of a chair so that a patient may be seated on a chair or stool on platform **16** either facing handles **29** and **30** or facing away from these handles. The vibrations of platform **16** received from its vibrating motor **18** will be transmitted directly through the legs of such chair to the trunk of the person seated thereon. In either event vibrations will be transmitted throughout the entire body of the patient, both through the trunk to the head and arms, and through the trunk to the extremity of the legs.

A back rest **49** is illustrated in FIGURES 6 and 11, which is adapted to engage recesses in the ends of handles **29** and **30** by fingers **50** and **51** on spring arms **52** and **53** respectively. Back rest portion **54** is tiltably affixed to arms **52** and **53** and may be adjusted to a plurality of positions thereon to suit the comfort of a person sitting on a stool on platform **16** and resting his back on back rest portion **54**. Back rest **54** may be fabricated of any suitable material and will preferably have a thin sponge rubber lining.

The intensity of the vibrations caused by the motors **18** and **25** may be adjusted in five ways: firstly, the speed of the motor will affect the intensity of the vibrations, secondly adjustment of the angle between the eccentric weights will have a similar effect. Thirdly, the relative position of the eccentric weights to the axis of the motor will affect the intensity of the vibrations and the position of the weights on the axle of the motor will have a corresponding effect. Finally, variations of the mass of the eccentric weights will affect the intensity of the vibrations. It is proposed that all of the five variants will be readily adjustable, especially for use in various applications where this machine is employed.

The foregoing is by way of example only and the invention should be limited only by the scope of the appended claims.

What I claim is:

1. A kinesthetic therapeutic exercising device comprising in combination a base, a pedestal mounted on one end of said base, a platform on said base adjacent said pedestal, a plurality of resilient mounts between said base and said platform maintaining said platform in spaced relationship from said base, a lower motor casing fixedly mounted on said platform, a plurality of resilient mounts within said casing supporting a motor and maintaining said motor in spaced relationship from said lower casing, two eccentric weights axially mounted on said motor, said pedestal having an internally projecting mount member fixedly attached thereto near the upper end thereof, resilient mounts on said mount member, an upper motor casing mounted on said last named motor mounts and projecting upwardly from said pedestal, a plurality of resilient mounts within said upper motor casing supporting a motor and maintaining said motor in spaced relationship from said casing, a motor hood fixedly attached to the upper periphery of said pedestal, encasing said upper motor and its casing in spaced relationship, and a pair of handles fixedly attached to said motor casing and being diametrically opposed thereon, said handles projecting through said motor hood, resilient lips on said motor hood through which said han-

dles project in spaced relationship, and two axially mounted eccentric weights on said last named motor, and control switches on said pedestal controlling both of said motors.

2. A kinesthetic therapeutic exercising device according to claim 1 said motors being provided with cooling means within said motor casings and suitable orifices in said casings to provide a ready flow of air.

3. A kinesthetic therapeutic exercising device as defined by claim 1 including wheel mounts adjustably connected to the axles of both said motors, fingers extending from said wheel mounts and set screws mounting said eccentric weights in pre-selected longitudinal position on said fiingers.

4. A kinesthetic therapeutic exercising device according to claim 1 in which said resilient mounts within said upper and lower motor casing each comprise resilient rubber members equally spaced around the periphery of each of said motors, four near the top and four near the bottom thereof, said members being equally spaced around the periphery of each of said motors.

5. A kinesthetic therapeutic exercising device according to claim 1 including a back rest pivotally supported by said handles in front of said pedestal above said base.

6. A kinesthetic therapeutic exercising device according to claim 1 in which said resilient mounts supporting said platform and said upper motor casing have threaded extensions vulcanized to both ends thereof, said threaded extensions engaging said base and said platform and said projecting mount member and said upper motor casing.

7. The combination as defined by claim 1 wherein said motor casing includes interior grooves and wherein said motors include exterior indentations, said resilient motor mountings being mounted in said grooves and indentations.

References Cited in the file of this patent

UNITED STATES PATENTS

2,349,743	Meyer	May 23, 1944
2,566,484	Coury	Sept. 4, 1951
2,687,717	Murphy	Aug. 31, 1954
2,980,109	Schein	Apr. 18, 1961